

WHAT IS CLAIMED IS:

- 5 1. An information delivery system for delivering WWW information provided by information servers on Internet to mobile computers connected to the Internet through a wireless network, comprising:

10 a plurality of cache servers provided in association with the wireless network and configured to be capable of caching WWW information provided by the information servers; and

15 a management unit configured to manage caching state of the cache servers, by receiving a message indicating at least a connected location of a mobile computer in the wireless network from the mobile computer, selecting one or more cache servers located nearby the mobile computer according to the message, and controlling said one or more cache servers to cache selected WWW information selected for the mobile computer, so as to enable faster accesses to the selected WWW information by the mobile computer.

20 2. The system of claim 1, wherein the selected WWW information is selected according to an information related to a user of the mobile computer.

25 3. The system of claim 1, wherein the selected WWW information is selected according to an information related to an information provider of the selected WWW information.

30 4. The system of claim 1, wherein the mobile computer sends the message containing identification information for specifying one or more WWW information, at least at a time of network connection; and

35 the management unit controls said one or more cache servers to cache WWW information selected according to the identification information contained in the message as the

selected WWW information.

5. The system of claim 1, wherein the mobile computer sends the message containing a user ID of a user of the mobile computer; and

a
the management unit registers in advance user IDs of users of the mobile computers in correspondence to respective identification information for specifying one or more WWW information, and controls said one or more cache servers to cache said one or more information specified by the identification information registered in correspondence to the user ID contained in the message as the selected WWW information.

6. The system of claim 1, wherein the mobile computer sends the message containing a user ID of a user of the mobile computer; and

the management unit registers in advance a correspondence between a user ID of each user of each mobile computer and one or more information provider IDs of those information providers who wish to provide services to said each user and a correspondence between each information provider ID of each information provider and one or more WWW information IDs of those WWW information which are to be provided by said each information provider, searches the information provider IDs registered in correspondence to the user ID contained in the message, searches the WWW information IDs registered in correspondence to each information provider ID found by a search, and controls said one or more cache servers to cache WWW information having the WWW information IDs found by a search as the selected WWW information.

7. The system of claim 1, wherein either the mobile computer or the management unit predicts another one or

more cache servers to be selected when a need to change cache servers nearby the mobile computer due to moving of the mobile computer is predicted to arise, and

the management unit controls said another one or more
5 cache servers to cache the selected WWW information according to a result of prediction.

8. The system of claim 1, wherein the management unit maintains an update frequency information indicating an
10 update frequency of WWW information provided by each information provider, and controls said one or more cache servers to carry out a cache update processing with respect to the selected WWW information according to the update frequency information.

15 9. The system of claim 1, wherein the management unit changes the selected WWW information cached in said one or more cache servers according to at least one of a likelihood by which each WWW information is expected to be
20 accessed and a priority level determined for each WWW information, when a cache state of any one of said one or more cache servers reaches to a prescribed criterion.

10. The system of claim 1, wherein the wireless network
25 comprises a first network for providing data transmission at relatively low transfer rate, and a second network for providing data transmission at relatively high transfer rate at least in a downlink direction, and

the management unit receives the message from the
30 mobile computer via the first network, and the cache servers transfer the selected WWW information to the mobile computer via the second network.

31. An information delivery system for delivering WWW
35 information provided by information servers on Internet to

mobile computers connected to the Internet through a wireless network, comprising:

a plurality of cache servers provided in association with the wireless network and configured to be capable of caching WWW information provided by the information servers; and

a management unit configured to manage caching state of the cache servers, by selecting one or more cache servers located within a geographic range defined for an information provider who provides WWW information from an information server, and controlling said one or more cache servers to cache selected WWW information selected for the information provider, so as to enable faster accesses to the selected WWW information by the mobile computer.

12. The system of claim 11, wherein information providers are classified into a plurality of classes, and said one or more cache servers and the selected WWW information are specified by the information provider in accordance with a predetermined range of numbers permitted for a class to which the information provider belongs.

13. The system of claim 11, wherein the management unit maintains an update frequency information indicating an update frequency of WWW information provided by each information provider, and controls said one or more cache servers to carry out a cache update processing with respect to the selected WWW information according to the update frequency information.

14. The system of claim 11, wherein the management unit changes the selected WWW information cached in said one or more cache servers according to at least one of a likelihood by which each WWW information is expected to be accessed and a priority level determined for each WWW

information, when a cache state of any one of said one or more cache servers reaches to a prescribed criterion.

15. The system of claim 1, wherein the wireless network
5 comprises a first network for providing data transmission at relatively low transfer rate, and a second network for providing data transmission at relatively high transfer rate at least in a downlink direction, and

the management unit receives a message from the mobile
10 computer via the first network, and the cache servers transfer the selected WWW information to the mobile computer via the second network.

16. A method for delivering WWW information provided by
15 information servers on Internet to mobile computers connected to the Internet through a wireless network, using a plurality of cache servers provided in association with the wireless network and configured to be capable of caching WWW information provided by the information
20 servers, the method comprising the steps of:

receiving a message indicating at least a connected location of a mobile computer in the wireless network from the mobile computer;

selecting one or more cache servers located nearby the
25 mobile computer according to the message; and

controlling said one or more cache servers to cache selected WWW information selected for the mobile computer, so as to enable faster accesses to the selected WWW information by the mobile computer.

30

17. A method for delivering WWW information provided by
information servers on Internet to mobile computers connected to the Internet through a wireless network, using a plurality of cache servers provided in association with
35 the wireless network and configured to be capable of

1
caching WWW information provided by the information
servers, the method comprising the steps of:

selecting one or more cache servers located within a
geographic range defined for an information provider who
5 provides WWW information from an information server; and

controlling said one or more cache servers to cache
selected WWW information selected for the information
provider, so as to enable faster accesses to the selected
WWW information by the mobile computer.

10

cont
18. A management device for use in an information delivery
system for delivering WWW information provided by
information servers on Internet to mobile computers
connected to the Internet through a wireless network, using
15 a plurality of cache servers provided in association with
the wireless network and configured to be capable of
caching WWW information provided by the information
servers, the management device comprising:

20 a first unit configured to receive a message
indicating at least a connected location of a mobile
computer in the wireless network from the mobile computer;

a second unit configured to select one or more cache
servers located nearby the mobile computer according to the
message; and

25 a third unit configured to control said one or more
cache servers to cache selected WWW information selected
for the mobile computer, so as to enable faster accesses to
the selected WWW information by the mobile computer.

30 19. A management device for use in an information delivery
system for delivering WWW information provided by
information servers on Internet to mobile computers
connected to the Internet through a wireless network, using
a plurality of cache servers provided in association with
35 the wireless network and configured to be capable of

5 caching WWW information provided by the information
servers, the management device comprising:

5 a first unit configured to select one or more cache
servers located within a geographic range defined for an
information provider who provides WWW information from an
information server; and

10 a second unit configured to control said one or more
cache servers to cache selected WWW information selected
for the information provider, so as to enable faster
accesses to the selected WWW information by the mobile
computer.

20. A mobile computer device for use in an information
delivery system for delivering WWW information provided by
15 information servers on Internet to mobile computers
connected to the Internet through a wireless network, using
a plurality of cache servers provided in association with
the wireless network and configured to be capable of
caching WWW information provided by the information
20 servers, the mobile computer device comprising:

a first unit configured to maintain a user ID of a
user of the mobile computer device;

25 a second unit configured to obtain a connected
location information regarding a connection location of the
mobile computer device in the wireless network; and

a third unit configured to notify a message containing
at least the user ID and the connection location
information, to a management device for managing caching
state of the cache servers, such that the message causes
30 the management device to select one or more cache servers
located nearby the mobile computer device according to the
message and control said one or more cache servers to cache
selected WWW information selected for the mobile computer
device, so as to enable faster accesses to the selected WWW
35 information by the mobile computer device.

21. The mobile computer device of claim 20, wherein the third unit notifies the message which also contains a bookmark information of a WWW browser operating on the mobile computer device, such that the selected WWW information is selected according to the bookmark information contained in the message.

22. A cache server device for use in an information delivery system for delivering WWW information provided by information servers on Internet to mobile computers connected to the Internet through a wireless network, using a plurality of cache servers provided in association with the wireless network, the cache server device comprising:
15 a cache memory configured to cache WWW information provided by the information servers; and
a caching processing unit configured to acquire selected WWW information selected for a mobile computer from the information servers and store the selected WWW information into the cache memory, when the cache server device is included in one or more cache servers located nearby the mobile computer according to a message indicating at least a connection location of the mobile computer in the wireless network which is sent by the mobile computer, so as to enable faster accesses to the selected WWW information by the mobile computer.

23. A cache server device for use in an information delivery system for delivering WWW information provided by information servers on Internet to mobile computers connected to the Internet through a wireless network, using a plurality of cache servers provided in association with the wireless network, the cache server device comprising:
35 a cache memory configured to cache WWW information provided by the information servers; and

a caching processing unit configured to acquire from an information server selected WWW information selected for an information provider who provides WWW information from the information server and store the selected WWW

5 information into the cache memory, when the cache server device is included in one or more cache servers located within a geographic range defined for the information provider, so as to enable faster accesses to the selected WWW information by the mobile computer.

10

Ant
24. A method for providing a caching service with respect to a specific user in a system for delivering WWW information provided by information servers on Internet to mobile computers connected to the Internet through a
15 wireless network, the method comprising the steps of:

registering the specific user as a premier user in an information delivery system having a plurality of cache servers provided in association with the wireless network and configured to be capable of caching WWW information
20 provided by the information servers; and

upon receiving a message indicating at least a connected location of a mobile computer in the wireless network from the mobile computer operated by the specific user, selecting one or more cache servers located nearby
25 the mobile computer according to the message and controlling said one or more cache servers to cache selected WWW information selected for the specific user, so as to enable faster accesses to the selected WWW information by the mobile computer.

30

25. A method for providing a caching service with respect to a specific information provider in a system for delivering WWW information provided by information servers on Internet to mobile computers connected to the Internet
35 through a wireless network, the method comprising the steps

of:

registering the specific information provider who provides WWW information from an information server as a premier sponsor in an information delivery system having a plurality of cache servers provided in association with the wireless network and configured to be capable of caching WWW information provided by the information servers; and

selecting one or more cache servers located within a geographic range defined for the specific information provider, and controlling said one or more cache servers to cache selected WWW information selected for the specific information provider, so as to enable faster accesses to the selected WWW information by the mobile computer.